

REMARKS

Claims 1, 13-15, 17-19, 21-22, 26, 28-34, 36-37, 39-40, and 42-43 are currently amended; claim 12 is currently cancelled; claims 2, 23 and 44-61 were previously cancelled; and claims 62 and 63 are new. Claims 1, 3-11, 13-22, 24-43 and 62-63 are pending in this application. No new matter has been added.

The Applicants wish to thank the Examiner for taking the time in a telephone call to confirm that features that were objected to in some claims while being rejected in other claims, were allowable as indicated in that Office Action because the objected claims in combination with the claim(s) from which they depend are not obvious over the cited references.

New claims 62 and 63 respectively rewrite claims 10 and 35, as previously presented, in independent form. Claims 10 and 35 are found to be allowable by the Examiner if rewritten in independent form. Accordingly, claims 62 and 63 are allowable over the cited references. The phrase “positioned within” included in the previously presented claims 1 and 29, from which claims 10 and 35 depend, respectively, has been revised to “coupled to”. No new matter has been added.

Claim Rejections Under 35 U.S.C. § 102.

The Examiner rejects claim 13 under §102(e) as being anticipated by U.S. Patent No. 6,379,214, to Stewart et al. Claim 13 recites a cutting head having a body adapted to receive an orifice at an orifice location, and having a mixing tube coupled to the body of the cutting head downstream of the orifice location; a motion assembly coupled to the cutting head via a clamp positioned around the body of the cutting head; and a nozzle body assembly removably coupled to the cutting head, the clamp holding the cutting head when the nozzle body is separated from the cutting head, thereby allowing access to the orifice location without removing the cutting head from the clamp. Emphasis added.

The Examiner asserts that Stewart discloses a clamp positioned around the body of the cutting head via items 160 and 132 of that invention. However, Stewart and the present application use similar language to refer to different components. Stewart does not disclose a clamp positioned around the body of the cutting head within the meaning of “cutting head” in the

present application. The term “cutting head” as used in Stewart refers to a general portion of that invention that includes the nozzle body 24, the inlet 22 and the mixing tube 26. Col. 4, lines 34-36. Item 160 of Stewart is a disengageable mount assembly attached to the mounting arm 132 (Col. 4, lines 23-24), including a clamping collar 174 attached to the nozzle body 24, as illustrated in Figure 5 and discussed in column 4, line 66 of Stewart. The nozzle body 24 of Stewart is not analogous to the cutting head body 16 of the present application. The term “cutting head” as used in the present application and in claim 13, is the portion that receives the orifice.

Although Stewart does not describe an orifice, one of ordinary skill in the art will appreciate that in Stewart, the orifice is positioned in the wider portion interposed between the tensioner 179 and nozzle body 24 of Figure 4. Mounting arm 132 is around the nozzle body 24 upstream of the cutting head. It is clear from Figure 4 that the portion of the apparatus in Stewart around which the mounting arm 132 mounts, is the nozzle body 24, which is not the part that receives the orifice. Therefore, the mounting arm 132 cannot possibly be around the portion of the apparatus in Stewart that receives the orifice, defined as the “cutting head” in claim 13. Accordingly, Stewart fails to teach, or even suggest or motivate, to position a clamp around the portion of the end effector assembly that receives the orifice (i.e. the cutting head). Therefore, claim 13, as amended, and all claims dependent therefrom are allowable under § 102 and § 103 over Stewart.

The Examiner further asserts that Stewart discloses a nozzle body removably coupled to the cutting head assembly because item 120 is removed in Figure 5. Applicants respectfully disagree. Item 120 does not refer to any specific part in Stewart; again, item 120 of Stewart is a general reference to a portion of the system in that invention that includes a nozzle body 24, an inlet 22 and a mixing tube 26. Col. 4, lines 34-36. Further, Figure 5 of Stewart is an exploded view detailing components of the disengageable mount assembly 160 of Figure 4. Col. 4, lines 32-34. Therefore, Figure 5 does not convey any part being removed or removable.

The Examiner further states that item 160 of Stewart is capable of holding items 24, 26 and 174 when item 120 is not connected. However, as discussed in column 4, lines 34-36 of Stewart, item 120 includes the nozzle body 24 and mixing tube 26; therefore it is impossible

for the mount assembly 160 to hold the nozzle body 24 and mixing tube 26 when item 120 (i.e. the nozzle body 24 and mixing tube 26) is not connected. As discussed above, in Stewart, the orifice must be disposed in the region between the tensioner 179 and nozzle body 24 and the mounting arm 132 is upstream of this region; therefore, the mounting arm 132 cannot hold the cutting when the nozzle body is separated. Both the mounting arm 132 and the nozzle body 24 would have to be disassembled to allow access to the orifice in Stewart.

Accordingly, claim 13, as amended, and all claims dependent therefrom are allowable under § 102 and § 103 over Stewart for the additional reason that Stewart fails to teach, suggest or motivate a nozzle body assembly removably coupled to the cutting head, the clamp holding the cutting head when the nozzle body assembly is separated from the cutting head, thereby allowing access to the orifice location without removing the cutting head from the clamp.

The Examiner rejects claim 19, asserting that Stewart discloses a position sensor 224 coupled to a clamp adjacent the cutting head. However, the position sensor 224 in Stewart is not coupled to the clamp or mounting arm 132. Instead, the position sensor 224 in Stewart is attached to the slide member 214 between the second ends 212 of the air cylinders 208. Col. 7, lines 7-8. As shown in Figure 7 of Stewart, this region is not adjacent the cutting head. Accordingly, in addition to being allowable for depending from claim 13, claim 19 is also allowable over Stewart because Stewart fails to teach, suggest or motivate a position sensor coupled to the clamp adjacent the cutting head.

Claim Rejections Under 35 U.S.C. § 103.

The Examiner rejects claims 1 and 29 as being obvious over Shepherd in view of U.S. Patent No. 5,234,185, to Hoffman. Similar to the discussion above, Shepherd fails to disclose a motion assembly coupled to a cutting head via a clamp positioned around the cutting head because the waterjet head of Shepherd is merely a general reference to a portion of that device, which includes the tube 26 on which the tilt control assembly 56 is installed to support the waterjet head 16. Page 2, paragraph [0023]; Figure 2. Although Shepherd does not address the orifice, one of ordinary skill in the art will appreciate that in Shepherd, the orifice is

positioned in outlet nozzle assembly 28 of Figure 2. The tilt control assembly 56 is around the tube 26 upstream of the cutting head. It is clear from Figure 2 that the portion of the apparatus in Shepherd around which the tilt control assembly 56 mounts (i.e. the tube 26) is not the part that receives the orifice. Therefore, the tilt control assembly 56 cannot possibly be around the portion of the apparatus in Shepherd that receives the orifice, defined as the "cutting head" in claims 1 and 29. Accordingly, Shepherd fails to teach, or even suggest or motivate, the clamp around the portion of the end effector assembly that receives the orifice (i.e. the cutting head). Nonetheless, to expedite moving the present application toward allowance, claim 1 is amended to incorporate the limitation of claim 12, which the Examiner has found to be allowable subject matter. Accordingly, claim 1 and all claims dependent therefrom are allowable.

Claim 29 is allowable over Shepherd in view of Hoffman because the tube 26, around which the tilt control assembly 56 is installed, does not receive the orifice as discussed above with respect to claim 1. Nonetheless, to expedite moving the present application toward allowance, claim 29 has also been amended to incorporate the limitation of claim 12, which the Examiner has found to be allowable subject matter. Accordingly, claim 29 and all claims dependent therefrom are allowable over Shepherd in view of Hoffman.

The Examiner rejects claim 37 as being obvious over Stewart in view of U.S. Patent No. 4,900,198, to Hoaki. Claim 37 is allowable over Stewart in view of Hoaki because Stewart does not teach or suggest the limitations of claim 37 for the same reasons as iterated above with respect to claim 13. Claim 37 is also allowable over Stewart in view of Hoaki because the swivel joint 12 in Hoaki rotates with respect to only one axis. See Figure 1. Claim 37 has been amended to clarify that the swivel of the present application is operable to swivel with respect to two axes. Accordingly, claim 37 and all claims dependent therefrom are allowable over Stewart in view of Hoaki.

The Examiner rejects claims 39 and 43 as being obvious over Stewart in view of Shepherd. Claims 39 and 43 are allowable over Stewart in view of Shepherd because Stewart does not teach or suggest the limitations of claims 39 and 43, respectively, for the same reasons as iterated above with respect to claims 1 and 13.

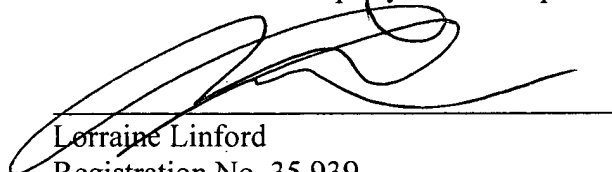
Furthermore, the claims have been universally amended to replace the phrase "cutting head assembly" with the phrase "cutting head" to clarify that as used in this application, the cutting head is a specific part and not a general reference to a portion of the apparatus. In the Examiner's response to previous arguments, the Examiner asserts that U.S. Publication No. 2002/0066345, to Shepherd et al. labels the water jet cutter as waterjet head 16, and on this basis the Examiner concludes that the waterjet head is also considered a cutting head, and therefore discounts elimination of the term "assembly" from the claims of the present application. However, the waterjet head as used in Shepherd refers to a general portion of the device in that patent; not to a specific part that receives the orifice and around which the clamp is positioned.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Applicants respectfully submit that all of the claims remaining in the application are now allowable and earnestly solicit favorable consideration and a Notice of Allowance.

Respectfully submitted,

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